

Claims

[c1] WHAT IS CLAIMED IS:

1. A camshaft adjuster for motor vehicles, the camshaft adjuster comprising:
an oscillating motor comprising a rotor that is fixedly connected to a camshaft and further comprising a stator surrounding the rotor, wherein the rotor is rotatable relative to the stator;
wherein at least one connecting part acting by at least one of positive engagement and force transmission is provided on a camshaft having cams;
wherein the rotor has a base member that is fixedly mounted on the at least one connecting part;
wherein the base member has a diameter that is different from a diameter of a circle circumscribing the cams of the camshaft.

[c2] 2. The camshaft adjuster according to claim 1, wherein the at least one connecting part is a positive-engagement part and has a non-round cross-section.

[c3] 3. The camshaft adjuster according to claim 1, wherein the at least one connecting part is a positive-engagement part and has a polygonal cross-section.

- [c4] 4. The camshaft adjuster according to claim 3, wherein the rotor has vanes projecting radially from the base member, wherein a number of corners of the polygonal cross-section matches a number of the vanes of the base member.
- [c5] 5. The camshaft adjuster according to claim 1, wherein an inner diameter of the base member is greater than the diameter of the circle circumscribing the cams of the camshaft.
- [c6] 6. The camshaft adjuster according to claim 1, wherein the at least one connecting part is a positive-engagement part having at least one positive-engagement element.
- [c7] 7. The camshaft adjuster according to claim 6, wherein the positive-engagement element is provided on a cylindrical wall of the positive-engagement part.
- [c8] 8. The camshaft adjuster according to claim 6, wherein the positive-engagement element extends axially.
- [c9] 9. The camshaft adjuster according to claim 6, wherein the positive-engagement element is a rib.
- [c10] 10. The camshaft adjuster according to claim 6, wherein the base member of the rotor is provided with at least

one groove for receiving the positive-looking element.

[c11] 11. The camshaft adjuster according to claim 1, wherein the at least one connecting part is a force transmission part embodied as a cone.

[c12] 12. The camshaft adjuster according to claim the 11, wherein the base member of the rotor has a wall surface that forms a conical surface.

[c13] 13. The camshaft adjuster according to claim 1, wherein the connecting part is a monolithic part of the camshaft.

[c14] 14. The camshaft adjuster according to claim 1, wherein the camshaft has at least one axial stop for the oscillating motor.

[c15] 15. The camshaft adjuster according to claim 14, wherein the axial stop is a radial collar of the camshaft.

[c16] 16. The camshaft adjuster according to claim 14, wherein the axial stop is a monolithic part of the camshaft.

[c17] 17. The camshaft adjuster according to claim 14, wherein the connecting part extends away from the axial stop.

[c18] 18. The camshaft adjuster according to claim 1, further

comprising at least one axial securing element configured to be fastened on the camshaft.

[c19] 19. The camshaft adjuster according to claim 18, wherein the axial safety element frictionally engages the camshaft.

[c20] 20. The camshaft adjuster according to claim 18, wherein the axial securing element is positively engages the camshaft.

[c21] 21. The camshaft adjuster according to claim 18, wherein the axial safety element is press-fit onto a free end of the camshaft.

[c22] 22. The camshaft adjuster according to claim 18, wherein the axial safety element is annular.

[c23] 23. The camshaft adjuster according to claim 18, wherein the axial securing element is a spring ring.

[c24] 24. The camshaft just to according to claim 18, wherein the axial securing element is an annular disk secured by a groove nut.

[c25] 25. The camshaft adjuster according to claim 24, wherein the groove nut is screwed onto a threaded end of the camshaft.

- [c26] 26. The camshaft adjuster according to claim 1, wherein the camshaft is a hollow shaft.
- [c27] 27. The camshaft adjuster according to claim 26, further comprising an insert inserted into the hollow shaft.
- [c28] 28. The camshaft adjuster according to claim 27, wherein the insert has supply lines for a pressure medium.
- [c29] 29. The camshaft adjuster according to claim 28, wherein the camshaft has radial bores communicating with the supply lines of the insert.